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Exploring attitudes towards infertility: insights from a primary healthcare setting

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ABSTRACT

Aims: This study aimed to assess attitudes and knowledge regarding infertility among adults attending a primary healthcare facility in Turkey, along with identifying influencing factors.

Methods: A descriptive cross-sectional survey was conducted among individuals aged 18-49 who admitted to a Hamidiye tranining and research hospital Family Medicine Outpatient Clinic. Participants completed the attitudes towards infertility scale (ATIS) and the Infertility Knowledge Test (IKT). Demographic data including age, gender, marital status, educational level, and reproductive history were collected.

Results: A total of 237 individuals participated in the study. The median ATIS score of the participants in the study was 50, and the median IKT score was 19. ATIS scores were lower among male (p:0,023), those who were married, had children, had experienced pregnancy, had lower education level compared to other groups (p<0.001 for all). Participants who expressed willingness to consider adoption if unable to have children had significantly higher ATIS scores (p=0.010). Higher knowledge scores correlated positively with more positive attitudes (p=0.006, R=0.178).

Conclusion: The study highlights a correlation between knowledge about infertility and attitudes toward the condition. These findings underscore the importance of educational programs aimed at increasing awareness about infertility and promoting a more positive societal attitude towards it.

Keywords: Infertility, attitude, knowledge, primary healthcare

INTRODUCTION

Infertility is defined as the inability to conceive after 12 months of regular, unprotected sexual intercourse.[1] Globally, it affects an estimated 13-15% of couples,[2] with similar prevalence observed in Turkiye, ranging from 10-20%.[3,4]

The desire to have children is a fundamental instinct and is a crucial aspect of identity and family for most couples.[5] In addition to social and financial consequences, infertility often leads to psychological issues such as depression and sexual dysfunction, making it a significant health concern.[5-8] Studies indicate that the psychological impacts and pressures associated with infertility are particularly pronounced in women.[2,6,9] In some cultural contexts, infertility, referred to as sterility, is perceived as a deficiency or defect, perpetuated by societal influences and misinformation.[10,11]

Various factors including genetics, age, smoking, caffeine intake, sexually transmitted diseases, and stress contribute to infertility.[12,13] Awareness of these factors is essential for taking preventive measures. Understanding the causes of infertility and seeking early medical intervention are crucial for managing the condition effectively. Research has shown that attitudes between partners can change significantly following an infertility diagnosis; and nearly half of infertile couples, irrespective of gender, often conceal their diagnosis due to societal stigma.[6]

This study aims to explore the relationship between individuals' knowledge about infertility and their attitudes towards the condition, along with identifying influencing factors.

METHODS

The study was carried out with the permission of the University of Health Sciences Hamidiye Faculty of Medicine

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Clinical Researches Ethics Committee (Date: 30.09.2022, Decision No: 22/08). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki.

This study is a descriptive cross-sectional survey conducted with individuals aged 18-49 who were admitted to the Family Medicine Outpatient Clinic of a training and research hospital for any reason between October 1, 2022, and December 1, 2022.

The study's inclusion criteria specified individuals between 18 and 49 years of age who volunteered to participate and completed all surveys and forms in their entirety. Informed consent was obtained from all participants. Demographic data including age, educational level, financial status, and number of children were recorded. The attitudes of couples towards infertility and their levels of infertility knowledge were assessed using the Turkish versions of the Attitudes Towards Infertility Scale (ATIS) and the Infertility Knowledge Test (IKT). The study enrolled voluntary participants, excluding those who did not fully complete the survey forms or did not meet the age criteria specified.

Instruments

The Attitudes Towards Infertility Scale (ATIS) was developed by Siyez and colleagues in 2018 to assess individuals' attitudes towards infertility. In the scale development study, exploratory factor analysis and confirmatory factor analysis methods were used, and the scale's Cronbach's alpha value was calculated as 0.85. ATIS comprises 12 items, with responses given on a five-point scale: (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree. Items 1, 2, 5, 6, 8, 9, 11, and 12 are reverse-scored. The total possible score ranges from 12 to 60, with higher scores reflecting a more positive attitude towards infertility.[14]

The Infertility Knowledge Test (IKT) was developed to assess individuals' level of knowledge regarding infertility. The test includes response options of "True," "False," and "Don't Know". It consists of 33 items, with 19 items scored normally and 14 items reverse-scored. The reverse-scored items are 2, 3, 10, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, and 32. Participants receive 1 point for each correct answer. The highest possible score is 33, and the lowest is 0, with higher scores indicating a greater level of knowledge about infertility. The validity and reliability study of the IKT found the average item difficulty index to be 0.49 and the reliability coefficient to be 0.77. The KR-20 formula was used to determine the reliability coefficient, considering the true-false scoring and varying item difficulty levels.[15]

Statistical Analysis

Statistical analyses were conducted using SPSS statistics 25 (IBM Corporation, NY, US). The normality of the distribution of quantitative data was assessed using the Kolmogorov-Smirnov and Shapiro-Wilks tests. Descriptive statistical methods, including percentages and mean± standard deviation (±SD) or median (interquartile range IQR), were used to summarize the basic characteristics of the data based on the normality assessment. For comparisons of quantitative data, the Mann-Whitney U test was used for comparisons between two groups, and the Kruskal-Wallis test was used for comparisons among more than two groups. Bonferroni correction was applied for pairwise comparisons to provide adjusted analysis results. Spearman's correlation test was employed for correlation analysis of quantitative variables that did not follow a normal distribution. Statistical significance was set at $p<0.05$.

RESULTS

A total of 237 individuals participated in the study, comprising 164 women (69.2%) and 73 men (30.8%). The average age of the participants was 32.68±8.66 years. Among them, 90 (37.9%) were married, and 70 (29.5%) had children, with the median number of children being 2 (range: 1-2). It was noted that 57 (35%) of the female participants had experienced pregnancy. Additionally, 40 participants (16.9%) reported a family history of infertility (Table 1).

Table 1. Demographic characteristics of the participants in the study

	Participants (n=237)
Age (year)	32.68±8.66[a]
Gender	
Female	163 (68,8%)
Male	74 (31.2%)
Marital status	
Married	90 (38%)
Single+ Widowed	147 (62%)
Parental Status	
Participants with children	70 (29.5%)
Median number of children	2 (1-2)[b]
Women who experienced pregnancy	57 (35%)
Family history of infertility	40 (16.9%)
Educational level	
High school and lower	55 (23.2%)
College and higher	182 (76.8%)
Income Status	
Income less than expenses	43 (18.1%)
Income equal to expenses	103 (43.5%)
Income more than expenses	91 (38.4%)
Receiving treatment support for infertility	
No	226 (95.4%)
Yes	11 (4.6%)
If you couldn't have children, would you consider adoption?	
No	44 (18.6%)
Yes	102 (43%)
Undecided	91 (38.4%)

a: Mean±SD (Standard deviation). b: Median (interquartile interval)

When examining the educational levels of the participants, it was found that 55 (23.2%) had a high school education or lower, while 182 (76.8%) had a college or higher (college and university) education. Among the participants, 43 (18.1%) reported that their income was less than their expenses, 103 (43.5%) stated that their income was equal to their expenses, and 91 (38.4%) indicated that their income was more than

their expenses. A total of 226 participants (95.4%) reported that they did not receive treatment support to have children, while 11 (4.6%) stated that they did receive treatment support (Table 1). In response to the question, "If you couldn't have children, would you consider adoption?" 44 participants (18.6%) answered "no," 102 (43%) answered "yes," and 91 (38.4%) were undecided.

The median ATIS score of the participants in the study was 50 (45-53), and the median IKT score was 19 (14-23). When ATIS scores were evaluated by gender, it was found that female participants had significantly higher ATIS scores (p=0.023). ATIS scores were lower among those who were married, had children, and had experienced pregnancy compared to other groups (p<0.001 for all); however, there was no statistically significant difference between groups with and without a family history of infertility (p>0.05). Participants with a college education or higher were found to have higher ATIS scores (p<0.001). There was no significant statistical difference found between participants' income levels, treatment status for having children, and their attitudes towards infertility (p>0.05, p>0.05) (Table 2).

Table 2. Comparison of ATIS scores across demographic characteristics of participants

	ATIS	p
Gender		
Female	51 (45-54)[a]	0.023[b,*]
Male	49 (45-51)[a]	
Marital status		
Married	47.50 (43-52)[a]	<0.001[b,*]
Single+ widowed	51 (47-54)[a]	
Parental status		
Yes	46.50 (40-51)[a]	<0,001[b,*]
No	51 (47-54)[a]	
Pregnancy experience		
Yes	48 (40-52.50)[a]	<0.001[b,*]
No	51 (47.75-54)[a]	
Family history of infertility		
Yes	45 (40-53)[a]	0.910[b]
No	51 (44.75-53)[a]	
Education level		
High school or lower	46 (40-51)[a]	<0.001[b,*]
College or higher	51 (47-53.25)[a]	
Income level		
Income less than expenses	51 (44-54)[a]	0.547[c]
Income equal to expenses	50 (44-53)[a]	
Income more than expenses	51 (46-53)[a]	
Receiving treatment support for infertility		
Yes	50 (45-53)[a]	0.750[b]
No	52 (44-55)[a]	
If you couldn't have children, would you consider adoption?		
No	49(43-55)[a]	p=0.010[c,*]
Yes	51 (47-54)[a,k]	pk=0.002[b,*]
Undecided	49 (44-52)[a,k]	

ATIS : Attitudes towards infertility scale ,a: Median (interquartile interval). b: Mann-Whitney U Test, c: Kruskal-Wallis Test. k, l: Letters indicating the statistical difference based on the Mann-Whitney U test. * Statistically significant (p<0.05).

In the study, participants who answered "Yes" to the question "Would you consider adoption if you couldn't have children?" had a median ATIS score of 51 (47-54), those who were undecided had a score of 49 (44-52), and those who answered "No" had a score of 49 (43-55). There was a significant difference in ATIS scores among the groups (p=0.010). Specifically, participants who answered "Yes" had higher ATIS scores compared to those who were undecided (p=0.002).

In the study, there was no significant statistical difference found in IKT scores across gender, marital status, presence of infertility in the family, and receiving treatment for having children. However, participants with a college education or higher and participants without children had significantly higher IKT scores (p<0.001, p=0.002). Furthermore, a positive correlation was found between participants' ATIS scores and IKT scores (p=0.006 R:0.178).

DISCUSSION

Our study assessed attitudes and knowledge levels regarding infertility among the reproductive-age population, revealing that as individuals' knowledge about infertility increased, their attitudes towards infertility improved. Although studies concerning attitudes towards fertility have been conducted in different populations such as midwifery and university students,[16,17] this study holds significance as it is the first in the literature to evaluate the Turkish version of the ATIS among individuals accessing primary healthcare services.

During the World infertility awareness month in 2006, a survey involving approximately 17,500 individuals highlighted the global lack of knowledge about infertility.[18] In a cross-sectional study by Ali et al.[19] involving 447 participants, low levels of knowledge about infertility were reported.

A study conducted with Moroccan youth found that both women and men had low levels of knowledge regarding infertility.[20] Another study utilizing the IKT demonstrated that medical students exhibited a good level of knowledge about infertility.[21] Similarly, Dönmez et al.[17] found comparable results among nursing students.

The high knowledge levels observed in these studies may be attributed to participants receiving education in the healthcare field. In our study, participants achieved a median IKT score of 19, which was above average. We attribute this to the fact that 76.8% of our participants were college educated or had higher education levels. Research indicates that as individuals' knowledge and awareness about infertility increase, their attitudes improve.[2]

Those who have more information about infertility are better able to understand it as a treatable medical condition and may develop a more supportive attitude towards infertility. Conversely, individuals with inadequate or incorrect

knowledge about infertility may exhibit more negative or fear-driven attitudes.[22] In our study, we also found a positive correlation between individuals' attitudes towards infertility and their knowledge levels about infertility, and we observed significantly higher ATIS scores among the college and higher educated group. These findings align with existing literature on the subject. In a study conducted in 2023 involving fertile and infertile women, it was observed that infertile women demonstrated a significantly higher level of knowledge compared to fertile counterparts. Additionally, it was found that as knowledge levels increased, there was a corresponding improvement in attitudes towards infertility.[23] In countries like Turkiye, where motherhood holds significant societal gender roles, women who are unable to fulfill this role often face stigma and negative discourse.[24] Numerous studies have reported that many women diagnosed with infertility experience social stigma.[25,26] Even when infertility is not attributed to the woman, the societal emphasis on motherhood can significantly impact women's sense of self-integrity, leading to greater identity crises compared to men.[27]

In our study, we found that women had more favorable attitudes towards infertility compared to men, as assessed by scale scores. We attribute this to women being more affected by the social consequences of infertility and approaching the issue with empathy. Additionally, attitudes towards infertility were more positive among singles, childless individuals, and women who had not experienced pregnancy compared to other groups. A study conducted in Bangladesh found that women's attitudes towards infertility were more positive, and it was also observed that as knowledge levels increased, their attitudes towards infertility improved.[28] Acar et al.[29] (2022) similarly demonstrated in their study using ATIS that singles exhibit more positive attitudes towards infertility compared to married individuals.

Limitations

Our study has several limitations. Firstly, the evaluation was limited to individuals attending a single outpatient clinic, resulting in a relatively small sample size. This may restrict the generalizability of our findings. Additionally, the predominance of participants with a college and higher education could potentially limit the representativeness of our results to the broader population. Conducting studies with larger and more diverse samples across multiple centers would enhance the inclusivity and generalizability of findings that can be applied to the wider community.

CONCLUSION

As a result, this study demonstrates that attitudes towards infertility are associated with individuals' level of knowledge about infertility, and these attitudes have significant social and psychological consequences. These findings underscore the importance of educational programs aimed at increasing awareness about infertility and promoting a more positive societal attitude towards it.

ETHICAL DECLARATIONS

Ethics Committee Approval

The study was carried out with the permission of the University of Health Sciences Hamidiye Faculty of Medicine Clinical Researches Ethics Committee (Date: 30.09.2022, Decision No: 22/08).

Informed Consent

All patients signed and free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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